

What is claimed is:

1. A method for genetically engineering mammalian cells to render them capable of regulated expression of a target gene comprising a DNA sequence encoding a target protein selected from the group consisting of IFN-gamma, IL-10, IL-12 and NO synthase, which method comprises introducing into the cells a target DNA construct comprising a target gene linked to a transcription control sequence permitting ligand-dependent expression of the target gene.
2. A method of claim 1 in which the cells are further engineered by the introduction into the cells of at least one regulatory DNA construct encoding a chimeric protein comprising any two or more of a transcription activating domain, a receptor domain capable of binding to a ligand, and a DNA binding domain, said target DNA construct comprising a gene encoding a target protein linked to a DNA sequence recognized by said DNA binding domain, said expression of the target gene is capable of being actuated by the presence of said ligand.
3. The method of any of claims 1 or 2, wherein the cells are present in the airways of a mammal.
4. The method of claim 3, wherein the mammal is a human.
5. The method of claim 4, wherein the target gene encodes a peptide sequence found in a naturally occurring human IFN-gamma, IL-10, IL-12 or NO synthase protein.
6. The method of any of claims 1 or 2, wherein the ligand has a molecular weight of less than 3 kD.
7. The method of any of claims 1 or 2 wherein the DNA constructs are introduced into the cells in one or more viral vectors.
8. The method of claim 4 wherein an aerosol formulation comprising the DNA constructs is introduced into the mammal's airways.
9. The method of claim 5 wherein an aerosol formulation comprising the DNA constructs is introduced into the mammal's airways.

10. The method of claim 6 wherein an aerosol formulation comprising the DNA constructs is introduced into the mammal's airways.

11. The method of claim 7 wherein an aerosol formulation comprising the DNA constructs is introduced into the mammal's airways.

12. A method for activating the expression in genetically engineered cells of at least one target selected from the group consisting of IFN-gamma, IL-10, IL- 12 and NO synthase, wherein the genetically engineered cells had been genetically engineered by the introduction of one or more nucleic acid constructs encoding polypeptide(s) which activate the expression of said target gene(s) in a ligand-dependent manner, the method comprising administering said ligand to said genetically engineered cells.